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ONITIS, Fabr.

O. nicanor, Fabr. Ent. Syst. I. p. 54; Syst. Eleut. I. p. 29.

The habitat of this insect has long been supposed to be North America; recent investigations have shown it to be a West Indian insect identical with *Phanæus sulcatus* Drury. The unique specimen in the cabinet of Leconte, and which had been in the possession of Hentz and Harris, has been ascertained to be a South African species, *O.* (*fossor* Boheman, fide Sallé) *fodiens?* Boh. The determination of the identity is due to A. Sallé, from an examination of the specimen, (Ann. Ent. Soc. France, 1869, p. 501, note).

BIOLOGICAL NOTES ON DIPTERA.—(Article 2nd.)

BY R. OSTEN SACKEN.

I.—A new American ASPHONDYLIA.

In a previous paper (Trans. Am. Ent. Soc. 1869, p. 299,) I have attempted to give a closer definition of the genus *Asphondylia*, and have described the first American species of the genus, *Asphondylia monacha*, n. sp., producing a gall on *Solidago*. In the same paper I mentioned a second, as yet undescribed species, *Asphondylia helianthi globulus*, Walsh in litt. Recently, a third species has been added to the list, producing a large flower-gall on *Rudbeckia*. It has been communicated to me by Mr. Jacob Stauffer, in Lancaster, Penna., together with drawings of the gall.

Concerning the gall, Mr. Stauffer writes as follows: "On the 21st of August I met with very large galls, formed on the flower of *Rudbeckia triloba?* They were in one case nearly round, of the size of a large apple; the other was an aggregation of galls of various sizes, forming a large excrescence."

In a few days the fly was obtained in numbers, as well as a parasitical hymenopteron, a *Callimome*, apparently identical with *C. advena*, O. S., which I had previously obtained from the gall of *Diastrophus nebulosus* on blackberry bushes.

Asphondylia rudbeckiæ conspicua, n. sp.—About 0.18 of an inch long. Grayish brown, thorax above opaque, grayish, with rows of blackish hairs; abdomen brown, with paler hairs; halteres brown; feet almost uniformly brownish, (paler when the hairs are rubbed off); wings rather dusky; the vein ending in the apex of the wing is gently arched towards its tip. Ovipositor dark brown; (described from dry specimens).

This *Asphondylia* shows the most important characters of its congeners, as defined in my previous article (l. c. p. 301). Its antennæ have the same structure, but, being mutilated in the specimens I have before me, do not allow a closer comparison. The ovipositor has the flattened cylindrical shape and horny consistency peculiar to the genus and the long, needle shaped, stiff organ projecting beyond it. What puzzles me about it, however, is, that whereas in two of the females which I have before me, the ovipositor (exclusive of the needle shaped organ) is very short, not longer than the abdominal segment preceding it, in a third specimen it has almost half the length of the abdomen. The pupæ are exactly like those of the other *Asphondyliæ* which I have seen, and also have the frontal projections *contiguous*, and not remote. *A. rudbeckiæ conspicua* at first sight is not unlike *A. helianthi globulus*, Walsh in litt., of which I owe a specimen to the kindness of my lamented friend. Walsh's species, however, is easily distinguished by the paler color of its hind tibiæ and tarsi. Its general coloring is also paler brown, with a yellowish-gray pubescence; its coxæ are pale; the vein ending in the apex of the wing is less arched than in *A. rudbeckiæ conspicua.*

A. helianthi globulus, Walsh, forms a rounded swelling on the stem of *Helianthus.* As it has never been described these notes may serve to identify it.

II.—On some undescribed Galls of CECIDOMYIA.

In addition to the deformations on plants, produced by *Cecidomyiæ*, which were described in my previous papers (*Monogr. of N. A. Dipt.*, Vol I., *Proc. Entom. Soc. Phil.*, 1866, p. 220, and *Trans. Am. Ent. Soc.*, 1869, p. 299), I give here a few new cases observed by me. Although I have not been able to rear the perfect insects from these galls, I deem it useful to draw the attention of collectors to them. The description of the gall, coupled with a short notice of the peculiarities of the larva, will help to recognize these cases easily.

Cecidomyia sambuci umbellicola, n. sp.

Among the umbels of the elder (*Sambucus racemosa*) in June, 1868, near South Orange, N. J., I observed some buds of the flowerlets which were considerably enlarged (from six to ten times the size of an ordinary bud), their shape remaining round. Inside of each of such buds I found an orange larva with a distinct breastbone and with two minute horny points, directed upwards, at the anal end of the body. The latter character, not uncommon among *Cecidomyiæ*, has been mentioned by me in the *Monographs of N. A. Diptera*, etc., I., p. 181.

Cecidomyia caryæ nucicola, n. sp.

Green husk of the nuts of the shell-bark hickory (*Carya alba*), deformed by swellings, giving it an irregular appearance. When cut open the bumps showed small round cavities on the inside, often two or three together, each containing a pale reddish larva. Its breast-bone is distinct, elongated, narrow, its branches short and square, ending in sharp angles anteriorly, instead of being rounded; the emargination between them broad and deep. Anal end of the body smooth. In one case, the husk of a small nut, thus deformed, had burst open, leaving the nut uncovered, although it was yet far from being ripe; what remained of the husk formed several wart-like swellings on the basal portion of the nut.

Found August 9, 1869, near Rhinebeck, N. Y.

Cecidomyia tiliæ citrina, n. sp.

Swollen and deformed terminal buds on young shoots of the linden tree (*Tilia americana*). The gall thus formed is irregular in shape, with leaves growing out of it; its flesh moderately succulent. The cavities inside are filled with bright lemon-yellow larvæ of *Cecidomyia*. Breast-bone small, but distinct; the excision on its anterior edge is unusually deep.

On the leaves surrounding the larger galls, the same gall occurred in the shape of a small round swelling of the midrib; its identity with the larger gall was proved by the presence of the yellow larvæ inside of it.

Found in July, 1869, near Sharon Springs, N. Y.

Cecidomyia quercus majalis, n. sp.

Blister-like gall of *Cecidomyia* on young leaves of the pin-oak (*Quercus palustris*).

Generally, these galls occur on the principal ribs of the leaf; sometimes between the ribs. They are oblong, blister-like, hollow; surface somewhat uneven, wrinkled, walls thin; color pale green or reddish. They bulge out on one side of the leaf and have a longitudinal slit on the other. Galls projecting on the under side of the leaf and having the slit on the upper side seem to be somewhat more common than those of the opposite description. The slit can be opened without injuring the gall by gently pulling at the sides. Such galls which grow upon a rib show a trace of it on their longitudinal diameter. The larva, which can be taken out of the slit without lacerating the gall, is rather larger than the majority of the larvæ of *Cecidomyia*, (about 0.2 of an inch long,) and not reddish, as usual, but white, smooth; the breast-bone is hardly visible, as its front part only is horny, having the appearance of a transverse, reddish-brown wavy line. The last abdominal segment has several minute, fleshy-pointed projections. The larva drops to the ground through the slit at a certain period of its development; hence, empty galls are often found.

Found in considerable numbers in the Central Park, N. Y., in May, 1869.

Contributions to the Natural History of the CYNIPIDÆ of the United State and their galls.—(Article 5th).

BY R. OSTEN SACKEN.

I.—New Observations on the Gall of CYNIPS QUERCUS PALUSTRIS, O. S.

Among the oak galls described in my previous articles, one of the most singular is the gall I named *Cynips quercus palustris*, from its frequent occurrence on *Q. palustris*, the pin-oak, although it is also occasionally found on other oaks of the red-oak group. This gall is especially remarkable on account of a small, cocoon-like body, containing the pupa, which rolls freely about in a comparatively large cavity, without being connected in any way with the walls of this cavity, or, in other words, with the substance of the plant upon which the gall is growing. An examination of the shell of this cocoon-like body (which, for brevity's sake, I will call *ovule*) proves that it does not consist of animal, but of vegetable matter, in other words, that the ovule is not a cocoon, although it contains the larva and afterwards the pupa. The growth of these galls is so sudden that, although I have seen thousands of them, I do not remember having seen one which was not full grown as far as the size is concerned. Once or twice only I discovered specimens arrested in their growth by some unknown agency and withered in that state; and in such specimens I observed the ovule still connected, by a short stem, with the leaf or branch upon which the gall was growing. It would seem, therefore, that the ovule is nothing but the usual kernel, existing in many other galls, but which here, during the growth of the gall, becomes disconnected from its shell.

During my rambles in the Central Park, in New York, in May, 1869, among numberless galls of this kind on the pin-oak, I observed a good many which were double, that is, consisted of two galls soldered together. Such galls instead of globular were oblong, sometimes slightly narrowed in the middle. Usually, there was no partition on